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ABSTRACT

In order to develop a scale to measure student attitudes toward desegregation in their own schools, 61 Likert type statements were developed and administered to over 3000 black and white middle school students in five schools in a southwestern community. Gordon Allport's criteria, particularly his contact theory of desegregation, provided the theoretical base for the study. Factor analysis of the responses yielded five factors which served as the basis for grouping 50 items into a five subscale test. The five emergent factors concerned (1) the concept of interdependence of groups; (2) perceptions of supportive organizational norms; (3) intergroup associations and interactions; (4) the criterion of equal status; and (5) students' acceptance of others different from them as peers. The internal consistency reliability of the scale was .92. Of seven other measures taken to test the validity of the scale, five were correlated highly with the total score and the subscale scores. (MJL)

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OPERATIONALIZING CONTACT THEORY:
MEASURING STUDENT ATTITUDES TOWARD DESEGREGATION

By

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Few problems of this century have been as widely studied by social scientists as the problem of race relations in the United States (as early as Bogardus, 1926; LaPiere, 1934). Public schools have long been a focus of much of this research (e.g., Criswell, 1936). As foreseen by Williams, Fisher, & Janis (1956), the desegregation of many school districts in the late 1960's and early 1970's created an excellent opportunity for researchers to study the impact of racial integration on a host of cognitive, affective, and social variables. Literally hundreds of studies have been done in schools all across the country (Cohen, 1975). However, more than 25 years after the initial 1954 Brown vs. Topeka Board of Education decision, the effects of school desegregation still are not known. More precisely, the effects of desegregation under varying circumstances have not yet been clearly delineated (St. John, 1975; Carithers, 1970; Schofield, 1978). In some schools, achievement scores have gone up after desegregation; in some, they have gone down. Similarly mixed results have been noted for desegregation's effects on attitudes toward members of different racial groups, the self-esteem of minority students, and other variables. A number of scholars in the field have speculated that one of the reasons we still seem to know so little about the processes and results of desegregation is that too little attention has been paid to social psychological theories that might assist in asking relevant questions and testing relevant hypotheses (St. John, 1975). For example, in The Nature of Prejudice, Gordon Allport delineated the fallacies inherent in the belief that intergroup relations automatically improve simply as a function of contact between members of different groups. Bringing people of different races to-

gether is not sufficient to reduce prejudiced attitudes and behaviors.

Rather, he suggested three criteria any organization must meet before desegregation within the organization can be successful. They are:

- 1) Equal status must be accorded to members of all racial and ethnic groups.
- 2) The organization must be structured in such a way that all groups are interdependent upon one another as they work toward common goals.
- 3) The social norms of that organization must support positive interracial interaction.

In 1969, Stuart Cook added two additional criteria to Allport's list. He asserted that cross-racial contact must also

- 4) Allow for real acquaintanceship to occur between members of different racial/ethnic groups, and
- 5) Bring together members of different groups that will contradict, rather than reinforce, existing group stereotypes.

The Allport and Cook caveats to "contact theory" are widely cited in the literature but generally ignored in the research. However, it has been suggested that this framework can help us explain and predict seemingly contradictory findings (Pettigrew, Useem, Normand, & Smith, 1973; Bullock, 1978). School desegregation will be successful only to the extent that schools meet the contact theory qualifications. One therefore would not expect desegregation to act as a monolithic independent variable, yielding the same results in widely differing situations. There are those occasions when contact theory would predict negative outcomes of intergroup interactions; at other times, positive outcomes should result. Schools with both successful and unsuccessful experiences with desegregation should be examined for the extent to which they meet the contact theory criteria.

An additional problem with school desegregation research has been a

dearth of reliable, valid instruments for social scientists to use (St. John, 1975). When measuring social psychological constructs such as attitudes, researchers typically have been forced to create their own questionnaires. Rarely are such questionnaires tested in advance. The result is that many of our school desegregation data are based upon surveys of unknown reliability and validity. In addition, the fact that different studies have not asked the same questions in the same ways diminishes our ability to synthesize and generalize their findings.

The purpose of the present study was to develop a reliable, valid scale to be used by a broad variety of school desegregation scholars that would be grounded in the contact theory criteria. The research was undertaken in an effort to provide both theoretical and psychometric clarity to desegregation research.

Method

Likert-type statements were written to reflect each of the contact theory criteria specified by Allport, and were designed to be used with a Strongly Agree to Strongly Disagree response continuum. A pool of 61 items was administered to approximately 3,300 middle school students in five schools in a Southeastern community. After eliminating students who failed to respond to more than 57 items, a final data set of 3,082 was established. Seventy per cent of the respondents were white. The remaining 30% were black. This 70/30 split was approximated in each school. Step-wise multiple regression was used to estimate the missing values of the 462 remaining students who failed to respond to at least one item. The responses of the black students were then separated from the responses of the white students so that the factor structures of the two groups could be compared and a decision could be made

as to whether to develop separate scales for blacks and whites or one scale for all students. The scores were standardized so that the pooled within group variances were equal to 1.0 for each item. Variance/covariance matrices were calculated separately for whites and for blacks. These matrices were then factor analyzed separately and four factors emerged for each group. Coefficients of factor congruence, the number and size of factor loadings, and the percentage of variance accounted for indicated that the factor structures of the two groups were very similar, so the responses of the black and white students were combined (Table 1).

At this point, respondents were randomly divided into an item analysis sample (N = 1504) and a cross-validation sample (N = 1578). Working with the item analysis sample, a correlation matrix for the 61 items was computed. Communality estimates of each of the variables were calculated using multiple R^2 's. A principal axes factor analysis was performed, and both orthogonal and oblique rotations were tried and compared. The items that loaded most highly on the emergent factors were chosen to form subscales representing those factors. After selecting the items that would be on the final scale, total scale and subscale reliability coefficients were computed on the cross-validation sample.

Data also were collected on a number of other variables so as to provide information on the validity of the scale. In each instance, the object was to see if the way school means varied on the contact theory scale was related in a predictable manner to the way the school means varied on each of the validation criteria. Seven measures were used to indicate the validity of the scale.

- 1) Students were asked to indicate the proportion of their friends who were of a different race than they, from 1(almost none of my friends) to 5(almost all of my friends).
- 2) The amount of interracial seating adjancies in the school cafeterias was plotted, coded, and converted into standard score measures (Campbell, Kruskal, & Wallace,1966).
- 3) The Battle Attitude Toward School Scale (Dzmico,Hines, & Northrop, 1975) was administerd, and black/white differences in general attitudes toward school were computed.
- 4) Students rated a white friend and a black friend on ten different traits (e.g., friendly vs. unfriendly, intelligent vs. slow, clean vs. dirty). Same minus different race friend ratings were averaged for blacks and for whites in each school (Bell-Nathaniel, et al., Note 1).
- 5) Using questions from a teacher survey developed by the National Opinion Research Center (Narot,1973), faculty members indicated the extent to which their schools had a generally multi-cultural orientation that reflected and included minority as well as majority persons and interests.
- 6) The amount of resegregation by classroom that occured within each school was figured by comparing a random sample of classroom racial ratios with the overall 70/30 ratio found in each school (Koslin, et al., 1972).
- 7) Teacher attitudes toward the success of desegregation at their schools were measured by asking other questions from the NORC study cited above (Narot, 1973).

Each of these measures was correlated with the subscale and total scale scores of the contact theory scale. In each case it was predicted that more positive validation scores (greater number of other-race friends, fewer racial differences in friend trait ratings, less within-school resegregation, etc.) would be found at schools with more positive student responses on the contact theory scale.

Results and Discussion

After considering the size of the factor eigenvalues and the amount of variance each factor accounted for, it was decided to rotate five principal

axes factors to both orthogonal (Varimax) and oblique (Simple Loadings) solutions. Because the interfactor correlations of the oblique rotation were moderately high (ranging from .09 to -.53), and because the oblique solution provided better simple structure, the oblique approach was preferred. Items were ordered according to the size of the loadings on each factor. Those items with loadings $> .35$ on a factor were selected to represent that factor as a subscale of the final test. The items selected to form each subscale and their loadings on the factors represented by the subscales can be found in Table 2.

The first factor to emerge from the analysis is made up almost entirely of items written to measure the concept of all groups being interdependent as they work toward common goals. Most of the items are worded positively, and they represent statements that deal both with the way things really are ("Black and white students help each other in my classes") and the way the students perceive things ought to be ("Blacks and Whites are better off when they work together than when they stay away from each other.") It has been named Interdependence. The second factor consists of items written to measure student perceptions of the organizational norms. Nearly all of them specifically reflect teacher and/or principal expectations and desires. All items have a positive thrust and the factor has been labelled "Supportive Norms."

The third factor contains negatively worded items that reflect Cook's belief that intergroup interactions should present the individuals involved with an opportunity for personal friendship. The factor has been labelled "Association." The criterion of equal status is reflected in the fourth factor. A number of status sources are represented (i.e., administration, faculty,

and peer sources of status), and there is a balance of positively and negatively worded items. The final factor is by far the smallest of the five, yet the factor analysis indicated that it was an important construct. The items correlated together in an unexpected fashion, and all of the statements are worded negatively. These items speak to active, overt behaviors taken to discriminate against students because of their race and measure one aspect of the extent to which students are willing to accept students different from themselves as peers. It therefore was named "Acceptance."

The internal consistency reliability of the scale was calculated using Cronbach's alpha (Cronbach, 1951). The total test reliability was .92, indicating that even though the scale was multi-dimensional, at a higher level of abstraction the items reflected the same construct. That construct is presumed to be a general contact theory concept of integration facilitation. All of the subscales but Acceptance had reliability coefficients of .82 or .83; its coefficient was .69. However, the Spearman-Brown prophecy formula (Nunnally, 1978) indicated that doubling the number of Acceptance items from five to ten would bring the alpha coefficient up to .82.

School-wide means were computed for the total score and the subscale scores of the desegregation scale. Means for each school on the validation measures were computed and correlated with the scale being developed. The proportion of students' other-race friends, the amount of racial integration in the school cafeterias, the trait differences in black and white friends perceived by white students, the amount of classroom racial balance within the schools, and the attitudes of teachers toward their own school's desegregation were all highly correlated with the total and subscale scores of

the contact theory scale. There were very few differences in general attitudes toward school between blacks and whites at any of the five schools. Validity coefficients involving school attitude difference scores were therefore difficult to interpret. Similarly, blacks saw very few differences between their black and white friends at any of the schools, rendering small validity coefficients between that measure and the contact theory scale. One question in the ratings of school multiculturalness was correlated with the contact theory scale in the direction opposite the one that had been predicted. Further investigation indicated that this was largely due to the fact that one school with relatively low contact theory scale scores was aware of its interracial conflicts and had begun discussing intergroup relations in classes in an effort to reduce tensions and hostilities.

When one is working with a small sample size, yet wishes to retain the relative subtlety of parametric, as opposed to non-parametric, correlation procedures, Hayes (1963) recommends the use of the Pearson r procedure to determine the magnitude of the relationship between two variables. At the same time, he suggests that the probability levels associated with the coefficients be ignored as unreliable when based on a sample size as small as the one employed in this study. This is the procedure followed here. The large size of many of the validity coefficients, and the fact that 80% of the coefficients calculated were in the direction predicted, are evidence of the construct validity of the scale being developed. The correlations between the contact scale and the validation measures can be seen in tables 3 and 4.

It is hoped that this scale can be used to bring greater coherence to desegregation research. It can be used as an independent variable to classify

schools for further research and as a dependent variable to evaluate the impact of various school programs on the perceptions of the students. We trust it can be useful to scientists as they study desegregation and practitioners as they try to make it work.

Table 1.

Coefficients of Congruence Between the Factors of
White Student Responses and the Factors of Black
Student Responses

Factor 1	Factor 2	Factor 3	Factor 4
.90	.95	.92	.92

TABLE 2
SUBSCALE STRUCTURE OF THE CONTACT THEORY SCALE

FACTOR LOADING	ITEM CONTENT
<u>FACTOR 1: INTERDEPENDENCE</u>	
.66	Black and white students in this school need each other.
.64	Blacks and whites have important things to offer each other.
.60	After blacks and whites get to know each other, they find they have alot in common.
.54	Blacks and whites are better off when they work together than when they stay away from each other.
.53	Black and white students at my school are all working together for the same things.
.51	Students at this school think it's good to get to know other students of different races.
.49	Black and white students help each other in my classes.
.47	Students of different races at my school work together well in the student activities.
.46	Students here like to have friends of different races.
-.44	It's better when schools have students of just one race.
.43	Black and white students play games together at this school.
.40	If people of different races don't play and work together they suffer for it.

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- .38 Students of different races at my school have to get to know each other at one time or another.
- .37 Going to this school helps me understand people of different races.
- .36 Other students expect you to have friends of different races.

FACTOR 2: SUPPORTIVE NORMS

- .74 The principal and assistant principals encourage students to make friends with students of different races.
- .71 Teachers encourage students to make friends with students of different races.
- .70 My principal and assistant principals think that all students should be friends.
- .68 Teachers here like for students of different races to understand each other.
- .67 Teachers here like for students of different races to get along.
- .50 This is a school in which everybody is encouraged to be friends.
- .46 My teachers feel good when people of different races become friends.
- .45 Teachers think students ought to get along with both blacks and whites.
- .42 If students of one race were being mean to students of a different race, our principal would try to help them solve their problem.
- .39 Black and white teachers at this school work well together.

FACTOR 3: ASSOCIATION

- .64 I talk to students of different races only when I have to.
- .53 My friends would think badly of me if I ate lunch with a student of a different race.

- .53 My friends would think badly of me if I went someplace after school with a student of a different race.
- .46 I often go through a whole school day and never say more than a few words to a student of a different race.
- .43 You have to be a particular race to get any privileges at this school.
- .42 People of different races just don't like being together.
- .41 My teachers think that students should sit only with other students of their own race.
- .40 Students don't like for other students to include people of different races in their activities.
- .40 Students of different races don't have much to do with each other at this school.
- .37 White students dislike other white students who spend too much time with their black friends.

FACTOR 4: EQUAL STATUS

- .60 Teachers at this school are fair to both black and white students.
- .59 All students at this school are treated equally.
- .52 Teachers at this school pay attention to both black and white students.
- .51 I don't know of any race that gets special treatment at this school.
- .47 The principal and assistant principals treat students of all races fairly.
- .45 Some students at this school get more opportunities to do things because of their race.
- .43 Students of one race get special treatment at this school.
- .37 Teachers treat me badly because of my race.

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- .36 Each student here has an equal chance to get into the most important student activities.

FACTOR 5: ACCEPTANCE

- .51 Some students think they are better than other students of a different race.
- .49 Some people at my school leave other people out of the fun because of their race.
- .47 Students here make fun of students of different races.
- .45 Some students here are not treated fairly because of their race.
- .45 Some students at this school are not treated fairly because of their race.

TABLE 3

CORRELATIONS BETWEEN THE CONTACT THEORY SCALE (TOTAL AND SUBSCALE SCORES)
AND THE VALIDATION MEASURES (EXCLUDING TEACHER SELF-REPORT DATA)

	TOTAL	INTER- DEPENDENCE	SUPPORTIVE NORME	ASSOCIATION	EQUAL STATUS	ACCEPTANCE
NUMBER OF OTHER RACE FRIENDS	.89	.95	.95	.58	.50	.74
CAFETERIA RACIAL INTEGRATION	.77	.83	.93	.60	.21	.45
WHITE/BLACK SCHOOL ATTITUDE DIFFERENCES*	.44	.17	.15	.78	.74	.38
FRIEND RATINGS: WHITES*	-.85	-.79	-.94	-.70	-.50	-.77
FRIEND RATINGS: BLACKS*	-.00	-.23	-.11	.45	.14	-.15
CLASSROOM RACIAL BALANCE*	-.43	-.31	-.12	-.59	-.70	-.31

*NEGATIVE CORRELATIONS WERE PREDICTED.

TABLE 4

CORRELATIONS BETWEEN THE CONTACT THEORY SCALE (TOTAL AND SUBSCALE SCORES)
AND THE TEACHER SELF-REPORT VALIDATION MEASURES

	TOTAL	INTER- DEPENDENCE	SUPPORTIVE NORMS	ASSOCIATION	EQUAL STATUS	ACCEPTANCE
<u>SCHOOL MULTICULTURALNESS</u>						
1. ARE MULTIETHNIC TEXTS USED?	.61	.67	.47	.69	.51	.11
2. ARE THERE SPECIAL PROJECTS DEALING WITH INTERGROUP PROBLEMS?	.14	.23	-.04	.21	.20	-.28
3. ARE THERE CLASS DISCUSSIONS ON RACE?	-.20	-.12	-.31	-.01	-.27	-.68
4. IS THERE A CLASS ON MINORITY GROUP HISTORY OR CULTURE?	.33	.38	.28	.56	.04	-.28
<u>TEACHER ATTITUDES</u>						
1. IS DESEGREGATION WORKING?	.60	.53	.76	.60	.33	.57
2. IS THERE CONTACT BETWEEN BLACK AND WHITE PUPILS?	.57	.52	.72	.75	.11	.28
3. ARE ANY TEACHERS UNFAIR TO BLACKS?	.65	.58	.80	.69	.32	.62
4. ARE ANY TEACHERS UNFAIR TO WHITES?	.97	.96	.92	.84	.95	.92
5. ARE SCHOOL ACTIVITIES INTEGRATED?	.88	.85	.88	.71	.88	.99

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